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**Light measurements.**—Following the well known methods of WIESNER, several careful investigations by RÜBEL have largely increased our knowledge of light conditions in alpine and desert regions and at sea. The most prolonged of these studies was made at Bernina Hospice,<sup>15</sup> a station in the Alps with an elevation of 2309 meters, where it has been clearly demonstrated that both the maximum light intensity and the light totals are greater than those for lower altitudes. The minimum light intensity at midday in the Alps is much higher than at Vienna, the ratio being 85:7; while a similar relation exists between the light totals. Other interesting items from the abundant data are the nearly equal values of direct and diffuse light during the growing period, the somewhat increased light intensity after precipitation, and the decidedly greater available light on southern as compared with northern slopes. Many of these data may prove valuable in interpreting alpine vegetation.

Observations made at sea<sup>16</sup> tend to show that the maximum light intensity differs little from those of regions of low altitude on shore, but that the amount of diffuse light is somewhat greater. The characteristic of desert light conditions<sup>17</sup> appears to be the low light intensity both at full sunlight and with cloudy sky, an intensity which increases considerably, however, immediately after rainfall. This must have some influence in modifying the otherwise extremely xerophytic conditions, but the author seems to follow other investigators of light phenomena in failing to recognize the influence of light upon transpiration.—GEO. D. FULLER.

**Work at Peradeniya.**—The numerous publications issued from the Royal Botanic Gardens at Peradeniya indicate great activity, which naturally expresses itself chiefly in investigations connected with economic plants. T. PETCH, the mycologist, has found a very fruitful field for cultivation; recent *Circulars* dealing with "Brown root disease" (*Hymenochaete noxia*), which attacks several of the most important plants; "A root disease of *Hevea*" (*Sphaerostilbe repens*), the Para rubber plant; "Root diseases of *Acacia decurrens*," a plant extensively used as a wind-break for tea or for "green manuring"; "Root diseases of tea"; and "Cacao and *Hevea* canker." In the *Annals*, the same author has presented a study of *Lasiodiplodia*,<sup>18</sup> showing in a striking way the confusion that has arisen among the subgenera of *Diplo-*

<sup>15</sup> RÜBEL, E., Untersuchungen über das photochemische Klima des Berninahospizes. Viertel. Natf. Gesell. Zürich 53:1-78. 1908.

<sup>16</sup> ———, Beiträge zur Kenntnis des photochemischen Klimas der Canaren und des Ozeans. *Idem* 54:289-308. 1909.

<sup>17</sup> ———, Beiträge zur Kenntnis des photochemischen Klimas von Algerien. *Idem* 55:91-102. 1910.

<sup>18</sup> PETCH, T., On *Lasiodiplodia*. Ann. Roy. Bot. Gard. Peradeniya 4:445-465. 1910.

*dia*; and also a study of *Thielaviopsis paradoxa*,<sup>19</sup> recently found to be the cause of a stem disease of the cocoanut palm in Ceylon.

In other *Circulars* issued during the latter part of 1910, E. E. GREEN presents a "Report on the outbreak of *Achatina fulica*," a ravaging snail; M. KELWAY BAMBER and R. H. LOCK discuss "The effect of different intervals between successive tappings in Para rubber (*Hevea brasiliensis*)"; Reports on "Cotton growing in Ceylon" and on "*Cymbopogon* grass oils in Ceylon" are published; and Director J. C. WILLIS presents the first of a series of directions as to "School gardening and nature study." WILLIS<sup>20</sup> has published also the first instalment of a revision of the catalogue of the vascular plants of Ceylon, published by TRIMEN in 1885.—J. M. C.

**Effect of strontium salts on algae.**—The chemical properties of calcium and strontium agreeing more closely than those of sodium and potassium, one might expect to easily substitute strontium for calcium in physiological relations. Investigations along the animal side have been to the contrary, and LOEW<sup>21</sup> has endeavored to gain further knowledge by tests with species of *Spirogyra* especially. Chemically equivalent solutions of calcium chloride (1 per cent) and strontium chloride (1.7 per cent) were used separately. The filaments remained for months in the calcium chloride practically intact. In the strontium chloride the injurious effects were manifested slowly, but within a month the chloroplasts became yellowish-green, less active in starch-making, and finally the cells died. In the strontium solution needle crystals developed in the cells, something which did not occur in the calcium solution. It appears obvious to the author that such crystals represent a combination of strontium with organic acid. Since the algae endure the strontium salt longer than any other except calcium, it seems that strontium does not rapidly displace from important positions in the protoplasm other metallic elements such as potassium and magnesium. According to the law of mass-action such a displacement would be expected. A discussion of why strontium does not physiologically replace calcium leaves the reader with little to cling to.—RAYMOND H. POND.

**Anatomy of Riccia.**—Taxonomists separate the genus *Riccia* into two subgenera, *Euriccia* and *Ricciella*. In the former the dorsal region of the thallus consists of columns of cells split at the corners, each 4 columns of cells thus inclosing a long narrow air chamber having no lateral communications; in the latter, flat lamellae bounding the relatively large air chambers. STEPHANI, however, studying *R. vesiculosus*, in which 8 cells bound the air chamber, places this form in the subgenus *Ricciella*, and says: "Dividing the genus into

<sup>19</sup> PETCH, T., *Thielaviopsis paradoxa* (de Seynes) v. Höhnelt. *Idem* 511-574.

<sup>20</sup> WILLIS, J. C., A revised catalogue of the flowering plants and ferns of Ceylon. *Idem* 467-510.

<sup>21</sup> LOEW, OSCAR, Ueber die Wirkung von Strontiumsalzen auf Algen. *Flora* 102: 96-112. 1911.